

3M Advanced Materials Division

3M™ Nextel™ Ceramic Fabric DF-13-4500

Introduction

3M™ Nextel™ Ceramic Fabric DF-13-4500 is a woven ceramic fabric designed to maintain strengths under a variety of extremely high temperature conditions.

DF-13-4500 provides structural reinforcements in oxide-oxide ceramic matrix composites (Ox-Ox CMC), metal matrix composites (MMC), and polymer matrix composites (PMC) for aerospace, industrial, and fuel cell applications. Ox-Ox CMCs, specifically in aircraft applications, enable operational efficiency through hotter engine temperatures and lower weight materials relative to existing metallic parts.

This fabric is woven using 3M™ Nextel™ Ceramic Rovings 610, 4500 denier.

Typical properties (not for specification purposes)

	DF-13-4500	DF-11-3000	DF-11
Input yarn	Nextel™ 610, 4500 Denier	Nextel™ 610, 3000 Denier	Nextel™ 610, 1500 Denier
Weave	5 Harness Satin	5 Harness Satin	8 Harness Satin
Thread count target warp/fill	12/12	14/14	27.5/27.5
Weight (oz/yd ²) sized/HC	14.1/13.8	11/11	11/11
Thickness (inch) sized/HC	0.019/0.014 ¹	0.013/0.010	0.012/0.010

¹ Thickness values shown for DF-13-4500 are based on ASTM D1777 Option 1 with an applied pressure of 0.60 psi. Thickness values shown for all other products are based on a 3M test method using a greater applied pressure of 0.625 psi. For a direct thickness comparison between DF-13-4500 and other products, reduce the thickness values shown for DF-13-4500 by 0.002 inch.

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